REMARKS

In an Office Action dated July 18, 2011, claims 1 and 3-19 were rejected. Herein, claims 1, 6, and 12-19 have been amended. No new matter has been added. Applicants respectfully request further examination and reconsideration in view of the following remarks.

I. Claim Rejections under 35 U.S.C. 103

1. Claims 1, 3, 4, and 7-19

Claims 1, 3, 4, and 7-19 were rejected under 35 U.S.C. 103(a) as being anticipated by Richardson ("H.264 and MPEG-4 Video Compression: Video Coding for Next-generation Multimedia," John Wiley & Sons, Ltd., January 16, 2004) in view of Srinivasan (US 2003/0194009). Applicants respectfully request reconsideration of the above-noted rejection in view of the following.

Claim 1 recites that coefficients used in a first calculation step are set so that no calculation using more than 16 bits is performed when calculating intermediate values which are not yet rounded in a first rounding step. Applicants respectfully submit that the above-noted feature of claim 1 is not disclosed, suggested, or otherwise rendered obvious by any combination of Richardson and Srinivasan based on the following.

On page 5 of the Office Action, the Examiner acknowledges that Richardson fails to teach that "coefficients used in a first calculation step are set so that none of the intermediate values calculated in the first calculation step exceed a 16-bit accuracy." As such, Richardson necessarily fails to teach the above-noted feature of amended claim 1.

Srinivasan is directed to a technique of using approximate bicubic filtering during motion estimation and compensation (Abstract). In particular, Srinivasan teaches a technique of multi-dimensional interpolation in which vertical filtering is applied in a first stage 810 and horizontal filtering is applied in a second stage 830 ([0123]-[0131], FIG. 8). In this regard, Srinivasan teaches that the first stage 810 applies, in sequential order, (i) a vertical filter F_v 812, (ii) a rounding rule 813, and (iii) a bit shift operation 814 to input pixels 811 in order to generate

intermediate values 820 limited to a word limit of 16 bits. The intermediate values 820 are then input to the second stage 830 to produce output pixel values 838.

In other words, Srinivasan merely teaches that only intermediate values 820 obtained after a rounding step (i.e., rounding rule 813) are limited to 16 bits. However, Srinivasan fails to disclose that values used in calculations to derive intermediate values which have not yet been rounded are limited to 16 bits, and as such, Srinivasan necessarily fails to teach that no calculation using more than 16 bits is performed when calculating intermediate values which have not yet been rounded.

In contrast to Richardson and Srinivasan, claim 1 requires that coefficients used in a first calculation step are set so that no calculation using more than 16 bits is performed when calculating intermediate values which are not yet rounded in a first rounding step.

In view of the above, Applicants respectfully submit that any combination of Richardson and Srinivasan fails to disclose, suggest, or otherwise render obvious the above-noted features of claim 1. Therefore, claim 1 is patentable over any combination of Richardson and Srinivasan.

Additionally, Applicants note that by providing the above-noted feature of claim 1, the presently claimed invention provides the advantageous effect of reducing the operation load and simplifying the configuration of a motion compensation apparatus by limiting not only intermediate values to 16 bits but also limiting values used in calculations to derive the intermediate values to 16 bits.

Claims 3, 4, and 7-11 are patentable over Richardson based at least on their dependency from claim 1.

Claim 12-14 and 19 recite that coefficients used in a calculation step are set so that no calculation using more than 16 bits is performed when calculating intermediate values which are not yet rounded in a rounding step. Applicants respectfully submit that the above-noted features of claims 12-14 and 19 is not disclosed, suggested, or otherwise rendered obvious by any

combination of Richardson and Srinivasan for reasons similar to those discussed above with respect to claim 1. Therefore, claims 12-14 and 19 are patentable over any combination of Richardson and Srinivasan.

Claim 15-18 recite that coefficients used by a calculation unit are set so that no calculation using more than 16 bits is performed when calculating intermediate values which are not yet rounded by a rounding unit. Applicants respectfully submit that the above-noted feature of claims 15-18 is not disclosed, suggested, or otherwise rendered obvious by any combination of Richardson and Srinivasan for reasons similar to those discussed above with respect to claim 1. Therefore, claims 15-18 are patentable over any combination of Richardson and Srinivasan.

2. Claim 5

Claim 5 was rejected under 35 U.S.C. 103(a) as being unpatentable over Richardson in view Srinivasan, and further in view of Sekiguchi et al. (US 2008/0084930, hereafter "Sekiguchi"). Applicants respectfully submit that Sekiguchi fails to provide disclosure that would obviate the above-mentioned deficiencies of Richardson and Srinivasan. Accordingly, claim 5 is patentable over any combination of Richardson, Srinivasan, and Sekiguchi based at least on its dependency from claim 1.

3. Claim 6

Claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over Richardson in view of Srinivasan and Sekiguchi, and further in view of Etoh et al. (US 2005/0063466, hereafter "Etoh"). Applicants respectfully submit that Sekiguchi and Etoh fail to provide disclosure that would obviate the above-mentioned deficiencies of Richardson and Srinivasan. Accordingly, claim 6 is patentable over any combination of Richardson, Srinivasan, Sekiguchi, and Etoh based at least on its dependency from claim 1.

II. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that claims 1 and 3-19 are clearly in condition for allowance. An early notice thereof is earnestly solicited.

If, after reviewing this Amendment, the Examiner believes that there are any issues remaining which must be resolved before the application can be passed to issue, it is respectfully requested that the Examiner contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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2011.10.17 11:25:42 -04'00'

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October 17, 2011